

**Space Weather Highlights**  
**15 June - 21 June 2020**

**SWPC PRF 2338**  
**22 June 2020**

Solar activity was very low throughout the reporting period. Region 2765 (S24, L=116, class/area Cao/beta on 05 Jun) was quiet and stable as it rotated around the W limb on 15 Jun.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at background levels throughout the reporting period.

Geomagnetic field activity was quiet under a mostly nominal solar wind environment.

**Space Weather Outlook**  
**22 June - 18 July 2020**

Solar activity is expected to be very low throughout the outlook period.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at normal to moderate levels throughout the outlook period.

Geomagnetic field activity is expected to range from quiet to unsettled. Unsettled levels are likely on 04 Jul in response to a SSBC and again on 06-07 Jul due to influence from coronal hole influence. The remainder of the outlook period is expected to persist at quiet levels.



### *Daily Solar Data*

Date	Radio Flux 10.7cm	Sun spot No.	Sunspot Area (10 <sup>-6</sup> hemi.)	X-ray Background Flux	Flares							
					X-ray			Optical				
					C	M	X	S	1	2	3	4
15 June	70	11	10	A0.0	0	0	0	0	0	0	0	0
16 June	69	0	0	A0.0	0	0	0	0	0	0	0	0
17 June	69	0	0	A0.0	0	0	0	0	0	0	0	0
18 June	68	0	0	A0.0	0	0	0	0	0	0	0	0
19 June	69	0	0	A0.0	0	0	0	0	0	0	0	0
20 June	68	0	0	A0.0	0	0	0	0	0	0	0	0
21 June	68	0	0	A0.0	0	0	0	0	0	0	0	0

### *Daily Particle Data*

Date	Proton Fluence (protons/cm <sup>2</sup> -day -sr)		Electron Fluence (electrons/cm <sup>2</sup> -day -sr)	
	>1 MeV	>10 MeV	>2MeV	
	15 June	8.3e+04	4.7e+04	1.7e+06
16 June	7.1e+04	4.7e+04	1.3e+06	
17 June	1.0e+05	4.7e+04	1.5e+06	
18 June	8.7e+04	4.7e+04	1.2e+06	
19 June	1.8e+05	4.7e+04	1.2e+06	
20 June	6.5e+04	4.7e+04	1.3e+06	
21 June	6.3e+04	4.7e+04	1.4e+06	

### *Daily Geomagnetic Data*

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	15 June	5	1-1-1-2-2-2-1-1	8	0-1-1-4-4-0-1-0	4
16 June	7	1-1-1-1-2-3-3-2	3	1-1-2-1-0-0-2-1	5	1-1-2-1-1-1-2-2
17 June	5	2-1-0-2-3-2-1-0	3	2-0-1-0-2-1-0-0	5	2-1-1-2-2-1-0-0
18 June	5	1-3-1-1-2-1-1-1	2	0-1-1-1-2-0-1-0	4	1-2-1-1-1-1-1-1
19 June	7	1-2-1-2-2-2-3-2	3	1-2-0-1-1-0-1-1	5	1-2-0-1-1-1-2-2
20 June	7	2-2-3-1-2-2-2-1	8	2-3-4-3-0-0-0-0	6	2-2-2-1-1-1-1-1
21 June	4	1-1-0-2-2-1-2-1	2	1-1-0-1-1-0-0-0	4	1-1-1-1-1-1-1-1



*Alerts and Warnings Issued*

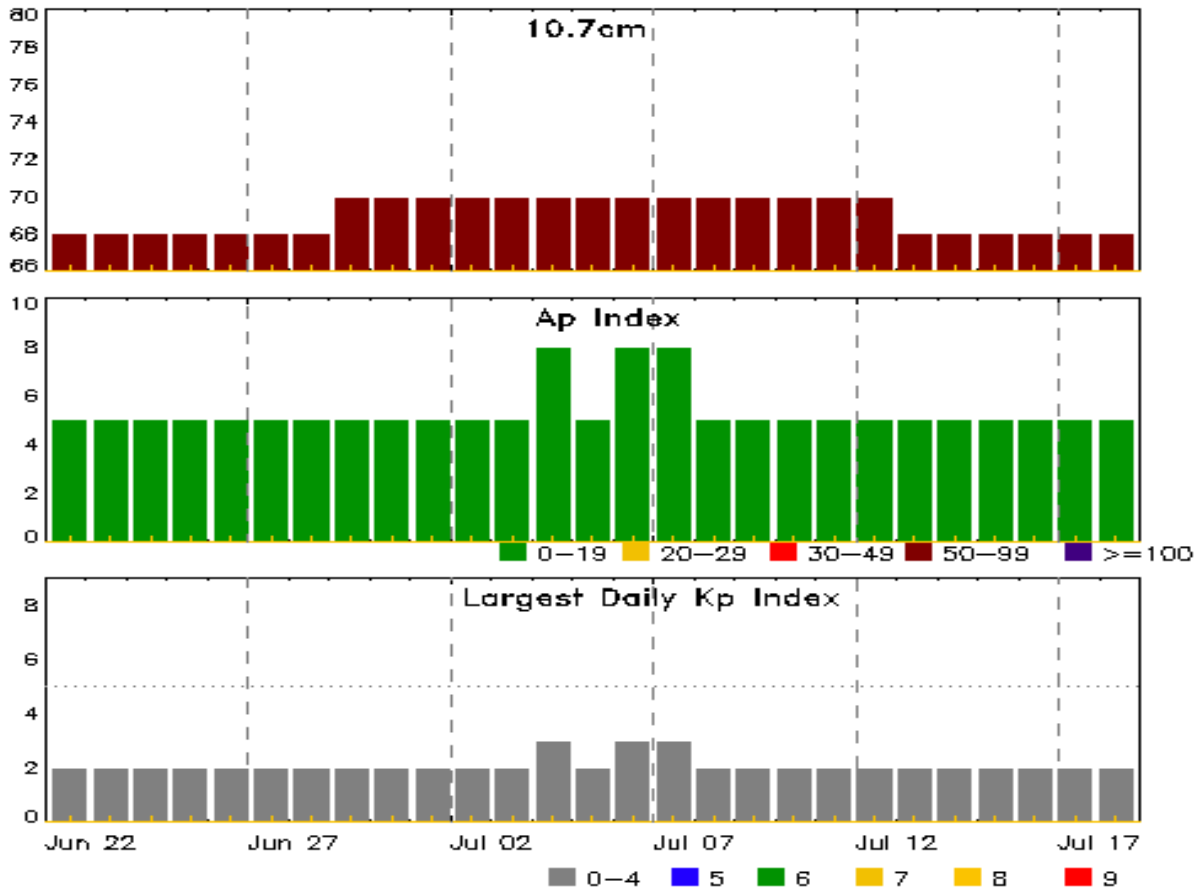
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<b>Date &amp; Time of Issue UTC</b>	<b>Type of Alert or Warning</b>	<b>Date &amp; Time of Event UTC</b>
No Alerts or Warnings Issued		

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## Twenty-seven Day Outlook



Date	Radio Flux 10.7cm	Planetary A Index	Largest Kp Index	Date	Radio Flux 10.7cm	Planetary A Index	Largest Kp Index
22 Jun	68	5	2	06 Jul	70	8	3
23	68	5	2	07	70	8	3
24	68	5	2	08	70	5	2
25	68	5	2	09	70	5	2
26	68	5	2	10	70	5	2
27	68	5	2	11	70	5	2
28	68	5	2	12	70	5	2
29	70	5	2	13	68	5	2
30	70	5	2	14	68	5	2
01 Jul	70	5	2	15	68	5	2
02	70	5	2	16	68	5	2
03	70	5	2	17	68	5	2
04	70	8	3	18	68	5	2
05	70	5	2				



### ***Energetic Events***

Date	Time			X-ray	Optical Information			Peak		Sweep Freq	
	Begin	Max	Half Max	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	Radio Flux 245	Radio Flux 2695	Intensity II

**No Events Observed**

### ***Flare List***

Date	Time			X-ray Class	Optical		
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	Rgn #
17 Jun	0446	0452	0455	A5.5			





**Recent Solar Indices (preliminary)**  
**Observed monthly mean values**

Month	Sunspot Numbers					Radio Flux		Geomagnetic		
	Observed values		Ratio	Smooth values		Penticton	Smooth	Planetary	Smooth	
	SEC	RI	RI/SEC	SEC	RI	10.7 cm	Value	Ap	Value	
<b>2018</b>										
June		19.7	9.4	0.48	9.1	4.3	72.5	70.0	7	7.4
July		1.3	1.0	0.77	9.4	4.2	69.7	70.0	6	7.3
August		10.0	5.2	0.53	9.0	4.0	69.1	70.0	10	7.3
September		5.7	2.0	0.35	8.7	3.9	68.3	70.1	9	7.3
October		6.9	2.9	0.42	9.2	4.1	69.5	70.3	7	7.1
November		7.3	2.9	0.48	9.5	4.0	68.9	70.4	6	7.0
December		5.6	1.9	0.34	9.3	3.6	70.0	70.3	7	6.9
<b>2019</b>										
January		16.0	4.6	0.29	9.0	3.2	71.6	70.0	6	6.8
February			0.5		8.7	3.0	70.6	69.8	7	6.7
March		14.8	5.6	0.39	8.3	2.8	71.5	69.7	6	6.6
April		11.5	5.5	0.48	7.9	2.6	72.4	69.6	6	6.7
May		18.1	5.9	0.34	7.4	2.3	71.3	69.6	7	6.7
June		11.6	0.7	0.06	7.3	2.2	68.1	69.6	5	6.5
July		1.6	0.5	0.31	7.0	2.1	67.1	69.7	6	6.3
August		2.5	0.3	0.16	7.0	2.1	67.0	69.8	7	6.2
September		2.6	0.7	0.27	6.8	1.9	68.1	69.7	10	6.2
October		1.8	0.2	0.11	6.2	1.6	67.4	69.5	8	6.2
November		1.1	0.3	0.27	5.3	1.3	70.2	69.3	4	6.0
December		7.2	0.9	0.14			70.9		4	
<b>2020</b>										
January		9.2	3.8	0.41			72.3		5	
February		5.5	0.2	0.04			71.0		6	
March		3.0	0.9	0.30			70.1		6	
April		8.5	3.2	0.38			69.5		6	
May		0.0	0.1				69.2		4	

**Note:** Values are final except for the most recent 6 months which are considered preliminary. Cycle 24 started in Dec 2008 with an RI=1.7.



## ***Preliminary Report and Forecast of Solar Geophysical Data (The Weekly)***

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**Notice:** The 27-day Outlook, Satellite Environment, X-ray and Proton plots have been redesigned. Comments and suggestions are welcome SWPC.Webmaster@noaa.gov

The Weekly has been published continuously since 1951 and is available online since 1997.

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